

WHAT IS CLAIMED IS:

1 1. A regulated laser welding apparatus for laser welding a
2 first workpiece and a second workpiece to join the
3 workpieces along a joint, said apparatus comprising:

4 a laser welding device including a laser beam source
5 arranged to be movable in a welding direction along said
6 joint of said workpieces, wherein said laser beam source is
7 further movable with respect to at least one of a location
8 and an orientation thereof relative to said joint of said
9 workpieces, and wherein said laser beam source is adapted
10 to emit a laser ^{beam} ~~beam~~ directed at a weld point on said joint
11 of said workpieces so as to form a weld seam therealong to
12 join said workpieces;

13 a sensor arrangement including a sensor arranged on or
14 near said laser welding device and coupled to said laser
15 welding device so as to move together with or following
16 said laser beam source in said welding direction along said
17 joint of said workpieces, wherein said sensor is directed
18 at said weld seam formed by said laser beam along said weld
19 joint so as to detect actual seam information
20 characterizing at least one of an actual seam position and
21 an actual seam flank angle of said weld seam that is
22 actually formed by said laser beam;

23 a weld seam position regulating arrangement that is
24 connected to said sensor arrangement so as to receive said
25 actual seam information, and that includes a regulating
26 circuit adapted to carry out a comparison of said actual